WHAT IS CLIMED IS:

1 A method for improving load and/or displacement controlled tools and systems for modeling and simulation for semiconductor devices comprising:

modification of the indentor blank;

improving the process to add different probe needles; and

controlling the method of the applied force or displacement.

2 The method according to claim 1 wherein the indentor blank comprises an orifice to accept a probe needle.

3 The method according to claim 1 wherein the indentor blank has a flat to allow bonding of a probe needle.

4 The method according to claim 1 wherein the probe needle is securely attached to the blank.

5 The method according to claim 1 wherein the indentor blank is two or more parts.

6 The method according to claim 1 wherein the indentor blank allows more than one type probe geometry.

7 The method according to claim 1 wherein the indentor blank design allows adjustment of the probe length.

8 The method according to claim 1 wherein the indentor blank is designed such that the centerline of the needle is not in the centerline of the indentor blank.

9 The method according to claim 1 wherein the force applied by the probe in not in the centerline of the indentor blank.

10 The method according to claim 1 wherein the force and displacement applied is not normal to the centerline.

11 A method for improved real time process control, device and package designs, enhance semiconductor support systems and better device reliability comprising;

using load and/or displacement controlled tools and features;

capturing data for modeling and simulation; and

implementing change based on the results.

12 The method according to claim 11 is to use an in-line load and/or displacement controlled tool with indentor blanks and probe needles to gather real-time electrical, mechanical and/or electromechanical data.

13 The method according to claim 11 where the tool is used to simulate electrical probing, mechanical stresses and/or environment factors on one or more target specimens.

14 The method according to claim 11 where the tool generates surface morphology data.

15 The method according to claim 11 where the tool is used to verify the strength of the probe needle.

16 The method according to claim 11 where the tool is used to review probe material to target material interactions.

17 The method according to claim 11 where the tool is used to capture optical images of the probe or target for evaluation and improvement.

18 The method according to claim 11 where the tool is used to analyze the deformation or fracture of a target site.

19 The method according to claim 11 where the results are used to analyze the surface and subsurface layers to suggest improvement.

20 The method according to claim 11 where the tool can be used in-line to provide real time feedback to process owners.